

IN THE CLAIMS

Claim 1 (currently amended) A composition for absorbing hydrogen, comprising:

a mixture of a polyphenyl ether and a hydrogenation catalyst, wherein the polyphenyl ether is comprised of at least 3 basic structural units and wherein hydrogen is ~~said composition is capable of absorbing hydrogen~~ at a pressure of less than about 1 atmosphere.

Claim 2. (original) The composition of claim 1, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.

Claim 3. (original) The composition of claim 1, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.

Claim 4. (original) The composition of claim 3, wherein the hydrogenation catalyst is Pt.

Claim 5. (original) The composition of claim 4, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.

Claim 6. (original) The composition of claim 1, wherein the hydrogenation catalyst is supported on a porous solid.

Claim 7. (original) The composition of claim 6, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or combinations thereof.

Claim 8. (original) The composition of claim 1, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the supported catalyst containing about 1-10 wt% metal.

Claim 9. (original) The composition of claim 1, further including a binder or filler.

Claim 10. (original) The composition of claim 9, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.

Claim 11. (original) The composition of claim 10, wherein the binder or filler is present at a concentration of from about 20-70 wt%.

Claim 12 (currently amended) A method for absorbing hydrogen, comprising:

providing a composition capable of absorbing hydrogen, wherein the composition comprises a mixture of a polyphenyl ether having at least three basic structural units and a hydrogenation catalyst, and wherein ~~the composition is capable of absorbing hydrogen is~~ is at a pressure of less than about 1 atmosphere.

Claim 13. (previously presented) The method of claim 12, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.

Claim 14. (previously presented) The method of claim 12, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.

Claim 15. (previously presented) The method of claim 14, wherein the hydrogenation catalyst is Pt.

Claim 16. (previously presented) The method of claim 14, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.

Claim 17. (previously presented) The method of claim 12, wherein the hydrogenation catalyst is supported on a porous solid.

Claim 18. (previously presented) The method of claim 17, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or

combinations thereof.

Claim 19. (previously presented) The method of claim 17, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the supported catalyst containing about 1-10 wt% metal.

Claim 20. (previously presented) The method of claim 12, further including a binder or filler.

Claim 21. (previously presented) The method of claim 20, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.

Claim 22. (previously presented) The method of claim 20, wherein the binder or filler is present at a concentration of from about 20-70 wt%.

Claim 23 (currently amended) A composition for absorbing hydrogen from hydrogen/oxygen mixtures, comprising:

a mixture of a polyphenyl ether and a hydrogenation catalyst, wherein the polyphenyl ether is comprised of at least 3 basic structural units and hydrogen is at a pressure of less than about 1 atmosphere.

Claim 24. (previously presented) The composition of claim 23, wherein the polyphenyl ether is comprised of 4 to 7 basic structural units.

Claim 25. (previously presented) The composition of claim 23, wherein the hydrogenation catalyst is a precious metal or a metallic salt thereof.

Claim 26. (previously presented) The composition of claim 25, wherein the hydrogenation catalyst is Pt.

Claim 27. (previously presented) The composition of claim 26, wherein the hydrogenation catalyst is present at a concentration of from about 0.5 to 5 wt%.

Claim 28. (previously presented) The composition of claim 23, wherein the hydrogenation catalyst is supported on a porous solid.

Claim 29. (previously presented) The composition of claim 28, wherein the porous solid is activated carbon, aluminum oxide, or barium carbonate, or combinations thereof.

Claim 30. (previously presented) The composition of claim 28, wherein the concentration of supported hydrogenation catalyst is from about 5-50 wt% of the supported catalyst containing about 1-10 wt% metal.

Claim 31. (previously presented) The composition of claim 23, further including a binder or filler.

Claim 32. (previously presented) The composition of claim 31, wherein the binder or filler is an inert polymer, a thixotropic agent, a mineral, a carbon powder, or finely divided silica.

Claim 33. (previously presented) The composition of claim 31, wherein the binder or filler is present at a concentration of from about 20-70 wt%.

Claim 34 (new claim) The composition of either claim 1 or 31, wherein the composition is exposed to a temperature of at least 150° C.